

Reply to Office Action of August 10, 2005

REMARKS/ARGUMENTS

Claims 1 and 3-25 are pending in this application. By this Amendment, claims 1, 14, 17 and 21 are amended and claims 16, 18-19 and 22 are canceled without prejudice or disclaimer. Reconsideration in view of the above amendments and the following remarks is respectfully requested.

Entry of the amended claims is proper under 37 C.F.R. §1.116 since the amendments: (1) place the application in condition for allowance (for the reasons discussed herein); (2) do not raise any new issues requiring further search and/or consideration (since the amendments amplify issues previously discussed throughout prosecution without incorporating additional subject matter); and/or (3) place the application in better form for appeal (if necessary). Entry is thus requested.

A. The Office Action rejects claims 1 and 3-25 under 35 U.S.C. §103 over U.S. Patent No. 6,542,735 to Abrol et al. (hereafter "Abrol") and U.S. Patent No. 6,701,449 to Davis et al. (hereafter "Davis"). The rejection is respectfully traversed.

Amended independent claim 1 is directed to a method for managing a socket in a mobile communication system including allocating a socket corresponding to a call control processor (CCP) in each one of a plurality of target processors, communicating, via a first protocol, with each one of the plurality of target processors

using the corresponding allocated socket, and releasing the socket allocated to a selected target processor based on a reception state of a status message corresponding to the selected target processor. Further, releasing the allocated socket includes transmitting a status confirmation message, via a second protocol different than the first protocol, from the CCP to the selected target processor if the status message using the first protocol corresponding to the selected target processor is not received by the CCP, determining whether the status confirmation message has been received by the target processor, and determining whether to release the allocated socket according to the determination of the receipt of the status confirmation message.

Thus, according to embodiments of the present invention, even though the receipt of the status message is not received using the first protocol (e.g., no in step S307 in Figure 3), a status confirmation message is transmitted using a second protocol, which is different than the first protocol, to the selected target processor to thereby determine whether to release the allocated socket. Independent claims 14 and 21 also recite first and second protocols are respectively used.

On the contrary, Abrol merely describes the general processes related to creating sockets using TCP in column 8, line 47 to column 9, line 34 and using UDP sockets in column 10, lines 22-46. For example, column 8, line 66 to column 9, line 7

indicates that the state machine transitions to the closed state 815 (see Figure 8, for example) whenever: the network subsystem failure occurs, the failure to establish a TCP connection; an attempt to terminate the TCP connection, and the change of the IP address. Thus, if a TCP connection is not established, in Abrol, the connection is closed. This differs from the claimed features of the invention in which if a TCP connection is not properly communicating, a UDP status confirmation is transmitted to determine whether the socket merely needs to be re-allocated because of an error or whether the socket has to be completely released because it is down. Abrol does not teach or suggest using the first and second protocols and combinations thereof as claimed by the present invention.

The Office Action asserts Davis (column 6, lines 1-43, column 8, lines 1-22 and column 1, lines 45-47) discloses transmitting a status confirmation message, via a second protocol different than the first protocol, to the selected target processor if the message corresponding to the selected target processor is not received by the CCP and determining steps and combinations thereof as recited in claim 1. See page 3, lines 7-18 of the Office Action. On the contrary, Applicant respectfully submits that Davis is generally directed towards detecting a failure in one network appliance (e.g., server) and instantly transition operations from the failed appliance to a functional network

appliance (e.g., backup server). See column 1, lines 55-57 of Davis. Thus, Davis is directed to detecting failure in a network appliance SCMA 108, SCMB 110 not a client device (e.g., DAS client 102, SAN client 104, NAS client 106). However, each SCM 108, 110 allows verification of all network channels to insure that both SCMs are connected to all the networks. See column 5, lines 55-58 and column 10, lines 20-35 (e.g., configuration mask).

Figure 3 in Davis shows fault analyzer 324. Further, Figure 4 in Davis discloses operations of a fault monitoring process 400. As shown in Figure 4, after a predefined number of failed connection attempts in step 414, a configured channel is deemed to have failed and a fault analyzer is invoked at step 438. Once a connection is established, a SCM can monitor sockets using status messages, but if a count is 0 at step 426, the channel is deemed failed and the fault analyzer is invoked at step 438. See column 7, lines 1-13 and 32-40 of Davis. Figure 5 in Davis discloses a status message generator routine 500 using a plurality of status messages (step 516) before closing a socket in step 526. See column 8, lines 12-22 of Davis. However, Applicant respectfully submits that there is no disclosure to vary the status message.

Figure 6 depicts a flow diagram of a fault analysis procedure 600, which is invoked at step 438 of Figure 4. As shown in Figure 6, when all channels have faulted

in step 604, the routine deems the remote SCM failed. See column 8, lines 38-45 of Davis. Step 620 in Figure 6 discloses calculation of a QOS metric in step 620 (e.g., distributed fault analysis in Figure 7) used to determine a fail over decision whether to fail a remote or local SCM. See steps 634-644 and Figure 9 of Davis. Further, Figure 8 depicts the local and remote fault analysis routine described in step 714 of Figure 7. As shown in Figure 8, a sender task 804 builds and sends a request to a different network in steps 810, 814 and 818, and a receiver task 802 sleeps until awoken by reception of a reply to one of the requests. See column 9, line 52-column 10, line 8 of Davis. Again, Applicant respectfully submits Davis has no disclosure to vary disclosed monitoring or status messages.

Thus, Applicant respectfully submits that Davis discloses sending a plurality of messages or requests to determine the status of a network, a channel or an SCM. See Figures 4, 6 and 8-9 and column 8, lines 30-33 of Davis. Further, Davis discloses using QOS metric to determine a master/slave status for a local or remote SCM (Figures 7 and 9). See Figure 8 sender and receiver tasks 804, 802, step 602 in Figure 6 and fault analyzer 438 in Figure 4.

However, in contrast to recited features in claims 1, 14 and 21 and combinations thereof, Applicant respectfully submits that Davis does not teach or suggest

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communicating, via a first protocol with each one of a plurality of target processors, releasing the socket allocated to a selected target processor, wherein the releasing comprises transmitting a status confirmation message, via a second protocol different than the first protocol, from the CCP to the selected target processor if the status message using the first protocol corresponding to the selected target processor is not received by the CCP and combinations thereof as recited in claim 1. Further, Applicant respectfully submits that Davis does not teach or suggest any modification to its disclosure that would result in at least features of releasing the socket and combinations thereof recited in claim 1. Thus, Applicant respectfully submits that Abrol and Davis, individually or in combination, would not result in at least features of releasing the allocated socket and combinations thereof as recited in claim 1.

For at least the reasons set forth above, Applicant respectfully submits claim 1 defines patentable subject matter. Claims 14 and 21 define patentable subject matter for at least reasons similar to claim 1. Claims 3-13, 15, 17, 20 and 23-25 depend from claims 1, 14 and 21, respectively, and therefore also define patentable subject matter. Claims 16, 18-19 and 22 are canceled without prejudice or disclaimer. Withdrawal of the rejection of claims 1 and 3-25 under §103 is respectfully requested.

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CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance are earnestly solicited.

If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, Carl R. Wesolowski, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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